

C L A I M S

1. A device for the paint-less dent repair of vehicles, for applying a leverage force between a rigid internal structure and an inside surface of a panel to be straightened, comprising:

5 a first removable tool head, including

 a first base, having a first top surface and a first bottom surface,

 a first work-piece contacting portion fixed to said first top surface, and

 a first rod-like mounting portion having

 a first mounting end and a first tip support end,

10 a first central axis extending from the first mounting end to the first tip support end, and

 a screw thread extending over at least a portion of an outer surface between the first mounting and the first tip support ends,

 wherein said first tip support end is fixed to said first bottom surface;

15 a second removable tool head, including

 a second base, having a second top surface and a second bottom surface,

 a second work-piece contacting portion fixed to said second top surface, and

 a second rod-like mounting portion having

20 a second mounting end and a second tip support end,

 a second central axis extending from the second mounting end to the second tip support end, and

 a screw thread extending over at least a portion of an outer surface between the second mounting and the second tip support ends,

wherein said second tip support end is fixed to said second bottom surface;

an elongated lever having

an upper surface,

5 a lower surface opposing said upper surface,

a first aperture extending through said upper surface, and

a second aperture extending through said lower surface;

10 a means for attaching the first rod-like mounting portion within said first aperture, such that an angle between said first central axis and said upper surface is between 45 and 91 degrees, wherein said first work-piece contacting portion is above said upper surface; and

15 a means for attaching the second rod-like mounting portion within said second aperture, such that an angle between said second central axis and said lower surface is between 45 and 91 degrees, wherein said second work-piece contacting portion is below said lower surface.

20 2. A device as recited in claim 1 wherein said elongated lever is comprised of a malleable material, wherein a force required to plastically deform said lever is greater than a force required to straighten a panel.

3. A device as recited in claim 1, wherein said first aperture and said second aperture are threaded holes.

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4. A device as recited in claim 1, wherein said first aperture and said second aperture are slots.

5. A device as recited in claim 1, wherein said first and said second work-piece contacting portions are made from a material selected from the group consisting of metal, wood, plastic, rubber, carbon fiber composite, fiberglass composite, and solder.

6. A device as recited in claim 5, wherein said first and second work-piece contacting portions comprise:

10 an inner core, and
 an outer layer; wherein the inner core is of a harder material than the outer layer.

7. A device as recited in claim 1, wherein

 a first dimension between said first bottom surface and said upper surface, and
15 a second dimension between said second bottom surface and said lower surface,
 are adjustable.

8. A device for the paint-less dent repair of vehicles, for applying a leverage force between a rigid internal structure and an inside surface of a panel to be straightened, comprising:

20 a first removable tool head, including
 a first work-piece contacting portion, having a first bottom surface, and
 a first rod-like mounting portion having
 a first mounting end and a first tip support end,

a first central axis extending from the first mounting end to the first tip support end, and

a screw thread extending over at least a portion of an outer surface between the first mounting and the first tip support ends,

5 wherein said first tip support end is fixed to said first bottom surface;

a second removable tool head, including

a second work-piece contacting portion, having a second bottom surface, and

a second rod-like mounting portion having

10 a second mounting end and a second tip support end,

a second central axis extending from the second mounting end to the second tip support end, and

a screw thread extending over at least a portion of an outer surface between the second mounting and the second tip support ends,

15 wherein said second tip support end is fixed to said second bottom surface;

an elongated lever having

an upper surface,

a lower surface opposing said upper surface,

20 a first aperture extending through said upper surface, and

a second aperture extending through said lower surface;

a means for attaching the first rod-like mounting portion within said first aperture, such that an angle between said first central axis and said upper surface is between 45

and 91 degrees, wherein said first work-piece contacting portion is above said upper surface; and

5 a means for attaching the second rod-like mounting portion within said second aperture, such that an angle between said second central axis and said lower surface is between 45 and 91 degrees, wherein said second work-piece contacting portion is below said lower surface.

9. A device as recited in claim 8 wherein said elongated lever is comprised of a malleable material, wherein a force required to plastically deform said lever is greater than a force
10 required to straighten a panel.

10. A device as recited in claim 8, wherein said first aperture and said second aperture are threaded holes.

15 11. A device as recited in claim 8, wherein said first aperture and said second aperture are slots.

12. A device as recited in claim 8, wherein said first and said second work-piece contacting
20 portions are made from a material selected from the group consisting of metal, wood, plastic, rubber, carbon fiber composite, fiberglass composite, and solder.

13. A device as recited in claim 12, wherein said first and second work-piece contacting portions comprise:

25 an inner core, and

an outer layer; wherein the inner core is of a harder material than the outer layer.

14. A device as recited in claim 1, wherein

a first dimension between said first bottom surface and said upper surface, and

5 a second dimension between said second bottom surface and said lower surface,

are adjustable.

15. A device for the paint-less dent repair of vehicles, for applying a leverage force between a rigid internal structure and an inside surface of a panel to be straightened, comprising:

10 a first removable tool head, including

a first base, having a first top surface and a first bottom surface,

a first work-piece contacting portion fixed to said first top surface, and

a first rod-like mounting portion having

15 a first mounting end and a first tip support end,

a first central axis extending from the first mounting end to the first tip support end, and

a screw thread extending over at least a portion of an outer surface between the first mounting and the first tip support ends,

20 wherein said first tip support end is fixed to said first bottom surface;

a second removable tool head, including

a second base, having a second top surface and a second bottom surface,

a second work-piece contacting portion fixed to said second top surface, and

a second rod-like mounting portion having

a second mounting end and a second tip support end,

a second central axis extending from the second mounting end to the
second tip support end, and

a screw thread extending over at least a portion of an outer surface
between the second mounting and the second tip support ends,

wherein said second tip support end is fixed to said second bottom surface;

an elongated lever device having a proximal end and a distal end, comprising

two rod-like members, of approximately equal length and oriented
substantially parallel with each other;

a means for attaching the first rod-like mounting portion to said two rod-like members
at a first position between said proximal end and said distal end; and

a means for attaching the second rod-like mounting portion to said two rod-like
members at a second position between said proximal end and said distal end.

16. A device as recited in claim 15 wherein said elongated lever is comprised of a malleable material, wherein a force required to plastically deform said lever is greater than a force required to straighten a panel.

17. A device as recited in claim 15, wherein said first and said second work-piece contacting portions are made from a material selected from the group consisting of metal, wood, plastic, rubber, carbon fiber composite, fiberglass composite, and solder.

5 18. A device as recited in claim 17, wherein said first and second work-piece contacting portions comprise:

an inner core, and

an outer layer; wherein the inner core is of a harder material than the outer layer.

10 19. A device for the paint-less dent repair of vehicles, for applying a leverage force between a rigid internal structure and an inside surface of a panel to be straightened, comprising:

a first removable tool head, including

a first work-piece contacting portion, having a first bottom surface, and

a first rod-like mounting portion having

15 a first mounting end and a first tip support end,

a first central axis extending from the first mounting end to the first tip support end, and

a screw thread extending over at least a portion of an outer surface between the first mounting and the first tip support ends,

20 wherein said first tip support end is fixed to said first bottom surface;

a second removable tool head, including

a second work-piece contacting portion, having a second bottom surface, and

a second rod-like mounting portion having

a second mounting end and a second tip support end,

a second central axis extending from the second mounting end to the second tip support end, and

a screw thread extending over at least a portion of an outer surface between the second mounting and the second tip support ends,

wherein said second tip support end is fixed to said second bottom surface;

an elongated lever device having a proximal end and a distal end, comprising two rod-like members, of approximately equal length and oriented substantially parallel with each other;

a means for attaching the first rod-like mounting portion to said two rod-like members at a first position between said proximal end and said distal end; and

a means for attaching the second rod-like mounting portion to said two rod-like members at a second position between said proximal end and said distal end.

20. A device as recited in claim 19 wherein said elongated lever is comprised of a malleable material, wherein a force required to plastically deform said lever is greater than a force required to straighten a panel.

21. A device as recited in claim 19, wherein said first and said second work-piece contacting portions are made from a material selected from the group consisting of metal, wood, plastic, rubber, carbon fiber composite, fiberglass composite, and solder.

22. A device as recited in claim 21, wherein said first and second work-piece contacting portions comprise:

an inner core, and

an outer layer; wherein the inner core is of a harder material than the outer layer.

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